

CLAIMS

WHAT IS CLAIMED IS

1. A fixing element for fixing a first bone fragment (5.1), in particular a bone fragment in ankle joint fractures, to an associated second bone fragment (5.2), which includes an elongate spreading body (2; 2'; 2'') and an elongate fixing body (1; 1'; 1'') which can be introduced into aligned bores (4, 6; 4', 6'; 4'', 6'') in the bone fragments (5.1, 5.2) and which has a proximal first portion (1.1; 1.1'; 1.1'') which is to be introduced into the first bone fragment (5.1), a distal second portion (1.2; 1.2'; 1.2'') which adjoins the first portion and which is to be introduced into the second bone fragment (5.2), and a cavity (3; 3'; 3'') which extends substantially over its length, wherein the fixing body (1; 1'; 1'') is adapted to be introduced completely into the bores (4, 6; 4', 6'; 4'', 6''), it can be spread open transversely with respect to its longitudinal direction by a wedge action at least in the region of its two ends for connection to the respective bone fragment (5.1, 5.2) by proximal introduction of the spreading body (2; 2'; 2'') into the cavity (3; 3'; 3'') and after substantially complete introduction of the spreading body (2; 2'; 2'') into the cavity (3; 3'; 3'') it is of a greater dimension transversely with respect to its longitudinal direction at the distal end of the second portion (1.2; 1.2'; 1.2'') than at the proximal end of the second portion (1.2; 1.2'; 1.2''), characterised in that the fixing body (1; 1'; 1'') is adapted to be spread open substantially over its entire length.

2. A fixing element as set forth in claim 1 characterised in that the fixing body (1; 1'; 1'') comprises at least two body portions (9, 10) which adjoin each other in the peripheral direction and which are connected together movably sufficiently for spreading open.

3. A fixing element as set forth in claim 1 or claim 2 characterised in that the operative surfaces of the fixing body (1; 1'; 1'') and the spreading body (2; 2'; 2''), which co-operate for spreading open the fixing body (1; 1'; 1''), are of such a configuration that spreading of the second portion

(1.2; 1.2'; 1.2") begins at the distal end of the second portion (1.2; 1.2'; 1.2").

4. A fixing element as set forth in claim 3 characterised in that the co-operating operative surfaces of the fixing body (1; 1'; 1") and the spreading body (2; 2'; 2") are of such a configuration that at least one first part (17) of the first portion (1.1; 1.1'; 1.1") is spread open before the second portion (1.2; 1.2'; 1.2") is spread open.

5. A fixing element as set forth in claim 4 characterised in that the first part (17) is arranged in the region of the proximal end of the first portion (1.1).

6. A fixing element as set forth in one of the preceding claims characterised in that the first portion (1.1") is pivotably connected at its distal end by way of at least one leg element (21) to the proximal end of the second portion (1.2"), wherein

the fixing body (1") and the spreading body (2") are of such a configuration that upon introduction of the spreading body (2") the distal end of the first portion (1.1") is substantially completely spread open before in succession in a first step a part of the second portion (1.2) is spread open and in a second step the proximal end of the second portion (1.2") is spread open, or that upon introduction of the spreading body (2") the proximal end of the second portion is substantially completely spread open before in succession in a first step a part of the first portion is spread open and in a second step the distal end of the first portion is spread open, and the leg element (21) is of such a configuration and arrangement that the longitudinal spacing between the first and second portions (1.1", 1.2") is reduced during the second step.

7. A fixing element as set forth in one of the preceding claims characterised in that after the spreading body (2) is introduced into the

cavity (3) the fixing body (1) is of a larger dimension transversely with respect to its longitudinal direction at the proximal end of the first portion (1.1) than at the distal end of the first portion (1.2).

8. A fixing element as set forth in one of the preceding claims characterised in that in the non-spread condition the first portion (1.1'; 1.1'') is of a greater dimension transversely with respect to its longitudinal direction than the second portion (1.2'; 1.2'').

9. A fixing element as set forth in one of the preceding claims characterised in that projections (8) intended to penetrate into the bone (5) are provided at the surface of the fixing body (1; 1'; 1'') which is towards the bone (5).

10. A fixing element as set forth in one of the preceding claims characterised in that at least the fixing body (1; 1'; 1'') comprises a bioresorbable material.

11. A fixing element as set forth in claim 11 characterised in that the fixing body (1; 1'; 1'') comprises a polylactide which is reinforced in regions involving a tensile loading by tension-resistant, in particular bioresorbable fibers and/or fiber cloth.